

ABSTRACT

5 A radio link management system for a home or office
substantially (i) an ad hoc network of agents wirelessly
communicating among themselves, while (iii) clients wirelessly
communicate with proximate agents. Control of the network may be
centralized as network controller integrated with an agent, or may
be distributed upon the network of agents. Some agent or agents,
which may include an agent that is also the network controller,
typically serves as a gateway device which connects to a worldwide
10 communications network external to the home or office, normally by
fiber or by wire.

Each agent is most commonly a small radio transceiver plus
logic and power supply that mounts upon a wall and plugs directly
into an AC power socket. Agents wirelessly communicate among
15 themselves and with the controller -- which may be centralized or
distributed -- in a bandwidth-efficient mode since prime power is
not an issue. Each client, which is most commonly a battery-
powered user device, wirelessly radio communicates with one or more
proximately-located agents. Consistent with overall demand for the
20 radio resource, parameters for radio communication are allocated ad
hoc in a manner which is (a) client-dependent, and which (b) uses
the least power from the battery-powered client. The agents
establish an ad-hoc network among themselves, with routing among
and between the agents being both multi-hop and "minimum hop" to
25 conserve bandwidth. Accordingly both power and bandwidth are
conserved, each as and where required and desired.

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